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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,158	03/16/2001	Padmanabhan Sreenivasan	499.057US1	5792

21186 7590 03/14/2006

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EXAMINER

REFAI, RAMSEY

ART UNIT	PAPER NUMBER
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2152

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 09/811,158	Applicant(s) SREENIVASAN ET AL.	
	Examiner Ramsey Refai	Art Unit 2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/19/05</u> . | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
6) <input type="checkbox"/> Other: _____. |
|--|--|

DETAILED ACTION

Response to Amendment

Responsive to Request for Continued Examination (RCE) received on December 19, 2005. Claims 1-3 have been amended. Claims 4-17 have been added. Claims 1-17 are now pending further examination.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1, the terms “the servers” in line 2, “servers” in line 5, “the network” in line 5, “the servers” in line 6, and “other servers” in line 7 lack proper antecedent basis in the claim and therefore the use of these terms has rendered the claim indefinite. Also in claim 1, the limitation “a plurality of server connected by a first and a second network” is indefinite because it is not clear if the plurality of servers are on both networks or are evenly distributed. Also it is not clear what the relevance of using *a first and a second network* is to the claimed invention. Clarification is respectfully requested.

As per claim 2, the terms “each node” in line 8 and “other nodes” in line 10, lack proper antecedent basis and therefore the use of these terms has rendered the claim indefinite. Also the term “a server” in line 12 is indefinite because it is not clear what *server* has a process failure. Clarification is respectfully requested.

As per claim 3, the terms “each node” in line 9 and “other nodes” in line 11, lack proper antecedent basis and therefore the use of these terms has rendered the claim indefinite. Also the term “a server” in line 13 is indefinite because it is not clear what *server* has a process failure. Clarification is respectfully requested.

As per claims 4-11 and 3-16, these claims depend on the above rejected claims and are therefore rejected under the same rationale.

As per claim 12, the terms “the network ring ”and “the node” lack proper antecedent basis. Also the “upon completing” is indefinite because it is not clear what is being completed and what steps are involved in the completing. Clarification is respectfully requested.

As per claim 17, the terms “the network ring ”and “the node” lack proper antecedent basis. Also the “upon completing” is indefinite because it is not clear what is being completed and what steps are involved in the completing. Clarification is respectfully requested.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

4. Claims 1-4, 6-8, 10-13, and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Chao et al (U.S. Patent No. 6,438,705).

5. As per claim 1, Chao et al teach a computing system comprising a plurality of servers connected by a first and a second network (**Figure 1**), wherein the servers include a group membership service operable to determine membership of a process executing on a server in the plurality of servers for an application distributed across two or more of the plurality of servers (**column 3, lines 22-65**);

said membership communicated between servers in the network utilizing a proposal message and a commit message (**column 3, line 54-column 4, line 21; a node attempts to join by sending a join message to the node manager, the node manager can then reject or accept the join attempt**), and

further wherein the servers communicate with each other to detect server failure and transfer applications to other servers on detecting server failure (**column 3, lines 22-65**).

6. As per claim 2, Chao et al teach a method of maintaining high availability in a server cluster having a plurality of nodes, the method comprising:

instantiating a group communications service, a group membership service and a system resource manager on each node of the plurality of nodes_(column 3, lines 22-65);

communicating process membership in a group utilizing a proposal message and a commit message (column 3, line 54-column 4, line 21; a node attempts to join by sending a join message to the node manager, the node manager can then reject or accept the join attempt);

communicating between the group communications service, the group membership service and the system resource manager on each node to detect process failures and node failures (column 3, lines 8-15, 27-42);

transferring applications to other nodes on detecting node failure (column 3, lines 22-65); and

updating, by the group membership service, process membership in a distributed application upon detecting a process failure on a server (column 3, lines 22-65).

7. As per claim 3, Chao et al teach a computer readable medium having instructions thereon, wherein the instructions, when executed in a computer, (column 3, lines 22-65) perform a method comprising:

instantiating a group communications service, a group membership service and a system resource manager on each node of the plurality of nodes (column 3, lines 22-65);

communicating process membership in a group utilizing a proposal message and a commit message (column 3, line 54-column 4, line 21; a node attempts to join by sending a join message to the node manager, the node manager can then reject or accept the join attempt);

communicating between the group communications service, the group membership service and the system resource manager on each node to detect process failures and node failures (column 3, lines 8-15, 27-42);

transferring applications to other nodes on detecting node failure (**column 3, lines 22-65**); and updating, by the group membership service, process membership in a distributed application upon detecting a process failure on a server (**column 3, lines 22-65**).

8. As per claims 4, 8, and 13, Chao et al teach wherein the plurality of nodes includes an initiator node to send the proposal message to a coordinator node (**column 3, line 54-column 4, line 21**).

9. As per claims 6, 10, and 15, Chao et al teach wherein the plurality of nodes are arranged in a network ring and wherein the coordinator forwards the proposal node to a first node of the plurality of nodes and wherein the proposal message is forwarded to each node in the network ring (**column 2, lines 55-62**).

10. As per claims 7, 11, and 16 Chao et al teach wherein the initiator node issues the commit message upon receiving the proposal message from the non-initiator node in the network ring (**column 3, line 54-column 4, line 21**).

11. As per claims 12 and 17 Chao et al teach wherein upon receiving the commit message a node in the network ring performs the task of: caching the commit message; forwarding the commit message to a next node in the network ring; upon completing forwarding the commit message delivering the commit message to each process of a process group on the node (**column 8, line 43 – column 10, line 11**).

Claim Rejections - 35 USC § 103

12. Claims 5, 9, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chao et al (U.S. Patent No. 6,438,705) in view of Pedersen (U.S. Patent No. 5,862,348).

13. As per claims 5, 9, and 14, Chao et al fails to teach wherein the coordinator node comprises a longest running node in the plurality of nodes.

14. However, Pedersen teaches selecting a master server node from the available nodes based on whether the server node is the longest running node (**column 4, lines 20-67**). It would have been obvious

to one of the ordinary skill in the art at the time of the Applicant's invention to combine the teachings of Chao et al and Pedersen because doing so provides an efficient way of selecting a node as a cluster manager by using the longest running node's familiarity of the cluster to provide the knowledge needed to perform management duties on the cluster.

Response to Arguments

15. Applicant's arguments have been fully considered but they are not persuasive.
- In the remarks, the Applicant argues in substance that Chao et al fail to teach communicating group membership using a proposal message and a commit message.
 - In response, the Examiner respectfully disagrees. Chao et al teach that a node attempts to join by sending join message to node manager. The node manager can then reject or accept the join attempt by communicating to the join attempting node. (See column 3, line 54-column 4, line 21).

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are cited in the Notice of Reference Cited form (PTO-892).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Refai whose telephone number is (571) 272-3975. The examiner can normally be reached on M-F 8:30 - 5:00 p.m..

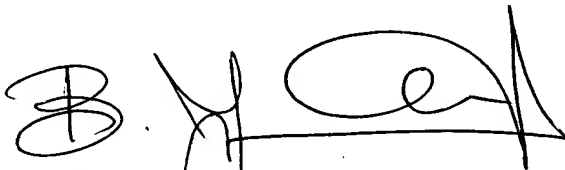
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2152

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RR 
February 22, 2006

Ramsey Refai
Examiner
Art Unit 2152


BUNJOB JAROENCHONWANIT
SUPERVISORY PATENT EXAMINER